

Post Office Box 9370 • Corpus Christi, Texas 78469-9370 • Telephone (361) 289-6000

March 1, 2012

## Certified Mail Return Receipt Requested

Office of Enforcement and Compliance Assurance Office of Federal Activities International Compliance Assurance Division (2254A) Environmental Protection Agency 1200 Pennsylvania Avenue, NW. Washington, DC 20460

RE: 2011 ANNUAL EXPORT REPORT

VALERO REFINING – TEXAS, L.P. CORPUS CHRISTI REFINERY – WEST PLANT SOLID WASTE REGISTRATION NUMBER: 30478

EPA ID NUMBER: TXD074604166

Dear Administrator,

Valero Refining – Texas, L.P. – West Plant is submitting this Annual Export report for the 2011 calendar year for hazardous waste that was exported to a foreign country for metals reclamation.

This report has been prepared in accordance with the requirements of 40 CFR 262.87.

262.87 (a) (1) The EPA identification number, name, and mailing and site address of the exporter filing the report;

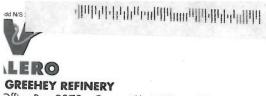
EPA ID number: TXD074604166, Valero Refining - Texas, L. P., P. O. Box 9370, Corpus Christi, Texas 78469-9370, 5900 Up River Road, Corpus Christi, Texas 78407-1001.

262.87 (a) (2) The calendar year covered by the report; Report year 2011.

262.87 (a) (3) The name and site address of each final recovery facility; EG Metal Corporation, 836 Hwang Seong-Dang, Namgu, Ulsan, Kyungsangnam-Do, Korea.

262.87 (a) (4) By final recovery facility, for each hazardous waste exported, a description of the hazardous waste, the EPA hazardous waste number (from 40 CFR part 261, subpart C or D), designation of waste type(s) and applicable waste code(s) from the appropriate OECD waste list incorporated by reference in §262.89(d), DOT hazard class, the name and U.S. EPA identification number (where applicable) for each transporter used, the total amount of hazardous waste shipped pursuant to this subpart, and number of shipments pursuant to each notification;





GREEHEY REFINERY

Office Box 9370 • Corpus Christi, Texas 78469-9370





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**EPA Mail** oute

To: Federal Activities

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Office of Enforcement & Compliance Assurance Office of Federal Activities International Compliance Assurance Division (2254A)
Environmental Protection Agency 1200 Pennsylvania Avenue, NW Washington, DC 20460

EG Metal Corporation, Waste (Spent) Hydrotreating Catalyst, EPA hazardous waste number K171, OECD waste classification number B1120, DOT hazard class 4.2, transporters included Best Delivery Systems Inc. – TXR000068676, Transfreight Express Lines, Dong Woo International and Se Bang Corporation, 5,053,300 lbs shipped in 133 shipments.

262.87 (a) (5) In even numbered years, for each hazardous waste exported, except for hazardous waste produced by exporters of greater than 100kg but less than 1,000kg in a calendar month, and except for hazardous waste for which information was already provided pursuant to §262.41:

262.87 (a) (5) (i) Provide a description of the efforts undertaken during the year to reduce the volume and toxicity of the waste generated;

The Source Reduction and Waste Minimization Plan Executive Summary can be found in Attachment I.

262.87 (a) (5) (ii) Provide a description of the changes in volume and toxicity of the waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984;

Valero Refining – Corpus Christi West Plant continues to implement provisions of the Source Reduction and Waste Minimization Plan. As required by that plan and associated reporting requirements, the annual progress report on source reduction and waste minimization activities will be submitted by July 1, 2012 to the Texas Commission on Environmental Quality, and will be available upon request.

262.87 (a) (6) A certification signed by the person acting as primary exporter: See attachment II.

If there are any questions or concerns on this information, please feel free to contact me at (361) 289-3282 or Marin.Maldonado@Valero.com.

Sincerely,

Marin Maldonado

Senior Environmental Engineer

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Attachments

## ATTACHMENT I

## SOURCE REDUCTION WASTE MINIMIZATION PLAN

## **EXECUTIVE SUMMARY**

#### I. **Facility Information**

Name of Company:

Valero Refining - Texas, L.P.

Parent/Holding Company:

Valero Energy Corporation

Physical Location:

5900 Up River Road, Corpus Christi, TX 78407

Mailing Address:

P.O. Box 9370, Corpus Christi, TX 78469-9370

Telephone Number:

361/289-6000

Contacts: 101/12 on. on.

Technical Contact: Meurer Claire Meurer Michael Cox, Manager – Environ. Engineering

Lillian Riojas, Sr. Mgr. Refinery Public Affairs

Public Relations Contact:

Bob Grimes, Director Human Resources

Permit Numbers:

30478

TCEQ Notice of Registration: TCEQ Water Discharge Permit: 01909

TCEQ Account Number:

NE-0112G

EPA Identification:

TXD074604166

EPA NPDES:

TX0063355

EPA General Stormwater:

TXF00D812

Dun & Bradstreet Number:

07-939-1280

Latitude:

027 49 00

Longitude:

097 29 30

SIC Code:

2911

## General Facility Description:

The Valero Corpus Christi West Refinery processes crude oil and heavy residuals into environmentally friendly motor fuels such as reformulated gasolines and low sulfur diesel. The facility is one of the newest refineries in the country with the majority of the process units at the plant constructed in the late 1980s and early 1990s.

#### II. Summary of Plan Revisions

This plan was originally developed in 1993.

In 1994, Valero made minor changes to update information on several of the reduction and minimization projects.

In 1998, the plan was updated to reflect a new five-year period for reduction and minimization goals.

In 2003, the plan was updated to reflect a new five-year period for reduction and minimization goals.

In 2008, the plan was updated to reflect a new five-year period for reduction and minimization goals.

## III. Hazardous Waste and Toxic Release Inventory (TRI) Data

The tables on the following pages contain hazardous waste and TRI data for the years 1987-2006. Significant variations in quantities of waste produced and pollutants emitted can be seen due to new hazardous waste listings and the addition and removal of TRI pollutants over the years.

In August 1998, EPA listed four refinery wastes as hazardous waste. These streams included: 1) Crude oil storage tank sediment (K169); 2) Clarified slurry oil storage tank sediment (K170); 3) Spent hydrotreating catalyst (K171); and 4) Spent hydrorefining catalyst (K171). These listings will continue to have a significant impact on the hazardous waste production at this facility.

## IV. Human Health and Environmental Risk Review

Appendix A to this executive summary contains an example of the information compiled and used by Valero to evaluate the risks associated with specific chemicals released from this facility or present in facility wastes. This evaluation has resulted in the priority pollutant list found below.

#### Priority:

Benzene

Ethyl benzene

Toluene

Xylene (Mixed Isomers)

### Secondary Assessments:

Ammonia
1,3-butadiene
Chlorine
Cresols
Cyclohexane

Ethylene Glycol Hexane

Hydrogen fluoride Methanol

Molybdenum trioxide

Methyl tertiary butyl ether (MTBE)

Naphthalene

Phosphoric acid Propylene

Sulfuric acid Antimony

Chromium Cobalt

Copper Nickel Hazardous Waste Shipped Off-site 1987-1996 (tons)

Waste	TCEQ			3,000							
Description	Waste										
	Code	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
LRU carbon	9001404H							5	7	13	10
filters											
Nickel catalyst,	9002393H							24	7		
spent											
Soil	9003301H							2	18		
contaminated											
with methanol											
Ni/Cd batteries,	9004309H										
spent											
Hydrocracking	9005393H								14		
catalyst											
Waste	9006207H										
mercaptan											
Ethylene glycol	9007296H								7		
Dimethyl	9008219H								1		
disulfide											
Caustic, spent	9009109H			93	758		1164	2255	3448	2151	
Heat exchanger	9010319H					11	4	13	16	61	3
cleanings						-10000					333.00
Paint waste	9011209H					4	10	7	9	5	5
Slop oil	9012409H	731	476		271	97					
emulsion solids											
Sulfuric acid,	9013104H										
spent									ì		
Hydrofluoric	9014104H										
acid, spent											
Treatment	9015603H			1							
sludge											
Primary	9016603H							2470	7	193	83
wastewater										Accordance .	
treatment sludge											
DAF Unit float	9017603H										
skim & bottom				No.							
API Separator	9018603H										
sludge											
Dewatered	9019409H	274	65		88	23		765	458	757	882
sludge											
Fuel gas	9020319H										
packing material											
SWS bottoms	9021409H	Barra sa securio								4	
HOC sand	9022310H										68
Activated	9023404H										
carbon, MVRU, spent											
Oleflex BUP	9024310H										
R.E.D catalyst,											
spent											
Degreaser	9025202H										
solvent, spent											

Waste Description	TCEQ Waste Code	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Hazardous debris	9026319H										
Refinery process wastewater	9027102H										
Platinum catalyst	9028393H										
Resin waste/petroleum dist.	9029212H										
HDS catalyst	9030393H										W. 200 St. 200 St.
Slurry tank bottoms	9031409H										
Crude oil tank bottoms	9032409H										
Hydrotreating catalyst, spent	9033393H										
Reactive fabric filters	9034310H										
47PSA adsorber catalyst	9035310H										
Mixed lab packs	9036003H			NO. 10							
MTBE catalyst	(970210)						28				
Lead debris	(979130)		2 30-2	C2.000	1						

Hazardous Waste Shipped Off-site 1997-2006 (tons)

Waste	TCEQ		Waste						ĺ	T	
Description	Waste				ORDONALA COM						
I DII . I	Code	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
LRU carbon filters	9001404H	1	2								
	000000077										
Nickel catalyst,	9002393H										
spent Soil	000220177										
contaminated	9003301H										
with methanol											İ
Ni/Cd batteries,	9004309H										
spent	9004309H										1
Hydrocracking	9005393H	1001-100			427	140	260				
catalyst	9003393H			i i	437	147	369			347	
Waste	9006207H	-									
mercaptan	90002071									ei.	
Ethylene glycol	9007296H	-									
Dimethyl	9007296H 9008219H										
disulfide	9008219H										
Caustic, spent	9009109H										
Heat exchanger	9010319H	58	100	164	201		201	1			
cleanings	9010319H	38	198	164	281	<1	301	214	318	315	192
Paint waste	9011209H	5	9	-	4						
Slop oil	9011209H 9012409H	3	9	4	4	-					1
emulsion solids	9012409H										
Sulfuric acid,	9013104H			-							
spent	9013104H							7			
Hydrofluoric	9014104H										
acid, spent	901410411							1			
Treatment	9015603H		-	- 0.00							
sludge	9013003H		10								
Primary	9016603H	11	<1			121					
wastewater	701000311	11	~1			121					
treatment											
sludge											
DAF Unit float	9017603H										
skim & bottom	301700311										
API Separator	9018603H					-					
sludge	301000311							1	ĺ		
Dewatered	9019409H	3251	434	1531	1835	1	1451	375	3758	1133	2277
sludge	7777	3231		1001	1055	•	1431	3/3	3/30	1133	2211
Fuel gas	9020319H										
packing	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
material					1						
SWS bottoms	9021409H										
HOC sand	9022310H		7	60	11						
Activated	9023404H	3	3	- 00							
carbon, MVRU,	2022 10 111		_		İ						
spent				Ì							
Oleflex BUP	9024310H	139	139			9	105	107	83		
R.E.D catalyst,				800		1	103	107	0.5		
spent											

Waste Description	TCEQ Waste Code	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Degreaser solvent, spent	9025202H			<1	<1	<1					
Hazardous debris	9026319H			10	<1	7	6	1	75	41	38
Refinery process wastewater	9027102H										
Platinum catalyst	9028393H			11	4		50		200		
Resin waste/petroleum dist.	9029212H			<1				1			
HDS catalyst	9030393H			2312	2688		2472	2568		2419	- 77.55
Slurry tank bottoms	9031409H						52				
Crude oil tank bottoms	9032409H										
Hydrotreating catalyst, spent	9033393H										
Reactive fabric filters	9034310H				<1						
47PSA adsorber catalyst	9035310H				30	14					
Mixed lab packs	9036003H						1			1.7	0.2

Toxic Release Inventory for 1987-1996

TRI Chemical	CAS No.	T	ease Inv			antity I		d (tons)						
Compound Name		1987	1988	1989	1990	1991	1992	1993	1994	1995	1996			
1,2,4-	95636	12707	1700	1707	1,7,0	1771	1772	1773	1774	2	1			
Trimethylbenzene	1									4	1			
1.3-Butadiene	106990				1	-	-							
Aluminum Oxide	100330	5035	5633		1	000000				-				
Ammonia	7664417	18	1	3	7	2	5	11	6					
Antimony compounds	N010	6	13	7	6	6	12	8	6	5	7			
Arsenic	11010	-	13	-	0	0	12	0	0	3	1			
Barium	7440-39-3				3	4								
Benzene	71432	8	1	1	1	1	22	20		-				
Carbonyl Sulfide	71432	0	1	1	1	1	22	20	6	5	4			
Chlorine	7782505	+	-		1	-	2	_			_			
Chromium compounds	7440-47-3	-	-		1	1	2	2	2	2	2			
Cobalt compounds	N096	-	-			1								
A		-			1	10	1	17	7	22	1			
Crossle (minst	N100									48				
Cresols (mixed isomers)	1319773													
Cyclohexane	111007	-												
	111827	2			1					1	1			
Diethanolamine	111422	-			1	1								
Ethylbenzene	100414					1	2	2	2	2	1			
Ethylene	74851									3	2			
Ethylene Glycol	107211							1	6					
Hydrochloric acid	7647010								2 - 2/50					
Hydrogen Fluoride	7664393		1					1	1	1	1			
Lead compounds	7439-92-1					1		23//						
Mercury compounds	7439-97-6			Uraya ya										
Methanol	67561				1	1	5	2	3	3	3			
Methyl-Tert-Butyl-	1634044	37	8	8	8	8	70	44	31	25	28			
Ether														
Molybdenum Trioxide	1313275					77	1	139	49	106	122			
Naphthalene	91203													
n-Hexane	110543									4	5			
Nickel compounds	N495				9	59	36	54	22	46	21			
Nitrate compounds	N511									30	34			
PACs														
PCB			2											
Phosphoric Acid	7664382										-			
Prochloroethylene														
Propylene	115071				1	1	21	21	21	22	5			
Selenium compounds					-	-	21	21	21	22				
Sodium hydroxide										-				
Sodium sulfate		15486	14162			-								
Sodium nitrate	7632000	25 100	1.102			-				11				
Sulfuric Acid	7664939	11	11	11	11	10	22	22	19	19	24			
Tetrachloroethylene	127184	- 11	11	11	11	10	1	1	1	1				
Thallium	22/107				1		- 1	1	1	1	1			
Toluene	108883	11	4		1		24	22	10	11				
Vanadium compounds	100003	11	4			207	24	22	19	11	4			
Xylene (mixed	1220207	1	-	-,	15	207	10	11	14	-,				
isomers)	1330207	1	1	1	1		12	11	14	11	8			
Zinc														
ZIIIC														

Toxic Release Inventory for 1997-2006

TRI Chemical	CAS No.	ic Kele	asc III								
Compound Name	CAS No.	1997	1000	1000	1 otal (	uantity					
1,2,4-	95636	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Trimethylbenzene	93030		<1	<1	<1	<1	<1	<1	2.2	1.2	1.5
1.3-Butadiene	106990	<del> </del>									
Aluminum Oxide	100990	-	<1	<1	<1	<1	<1	<1	0.1	0.1	0.1
Ammonia	7664417										
Antimony compounds	N010	-,	2	5	1	1	1	2	10045	8839	9037
Arsenic	NOTO	1	1	1	1	1	1	1	2.5	2.5	3.7
Barium	7440-39-3										
Benzene	71432	1 2	- 4								
Carbonyl Sulfide	71432	3	4	7	5	5	5	5	29	23	28
Chlorine	7792505	-			9	<1	<1	<1	54	53	53
Chromium compounds	7782505 7440-47-3	2	11	1	3	4	5	5	10	14	11
Cobalt compounds											
Copper compounds	N096										
Cresols (mixed	N100										7128
isomers)	1319773										
Cyclohexane	111007										
Diethanolamine	111827	1	1	2	1	1	1	1	11	7.8	9.3
Ethylbenzene	111422										
Ethylene	100414	1	1	1	1	1	<1	1	47	14	15
	74851	2	_1	9	4	5	4	5	5.9	8.8	9.2
Ethylene Glycol	107211		<1	<1	1	1	<1	<1	105	72	110
Hydrochloric acid	7647010		1	1	<1	1	1	1	84	64	62
Hydrogen Fluoride	7664393	1	1	1	<1	<1	<1	<1	121	108	127
Lead compounds	7439-92-1					<1	<1	1	1	1.4	1.3
Mercury compounds	7439-97-6								0.02	0.05	0.04
Methanol	67561	2	493	450	7	10	39	16	89	68	45
Methyl-Tert-Butyl-	1634044	32	41	64	47	40	46	44	812	319	446
Ether											250.000
Molybdenum Trioxide	1313275		128	173	130	<1	<1	<1	100	69	0.4
Naphthalene	91203								0.7	0.1	0.2
n-Hexane	110543	5	7	11	12	8	12	15	69	45	56
Nickel compounds	N495	4	44	65	66	1	1	1	63	72	6.4
Nitrate compounds	N511	31	135	137	145	159	165	168	854	889	810
PACs									1.6	1.6	0.9
PCB											0.,
Phosphoric Acid	7664382									-+	
Prochloroethylene			1	1	1	1	1	1	1.9	2	2
Propylene	115071	5	4	15	6	7	5	7	10	16	17
Selenium compounds											
Sodium hydroxide								_	_		
Sodium sulfate											
Sodium nitrate	7632000										
Sulfuric Acid	7664939	26	25	26	24	7	5	11	66	59	53
Tetrachloroethylene	127184	1						-		57	25
Thallium											
Toluene	108883	3	5	7	4	4	4	4	49	33	46
Vanadium compounds					21	3	1	1	165		5.8
Xylene (mixed	1330207	5	5	6	4	4	3	5	194	79	89
isomers)							_		174	,,	0)
Zinc					1	1					

## V. Reduction Goals

The tables below identify completed, ongoing and new projects. These projects are divided into two categories (Hazardous Waste and TRI) and each category into two divisions (Source Reduction and Waste Minimization).

Completed/Ongoing Projects

Project Name	Category and Division	Pollutant Targeted	Reduction Goals
Bio-slurry Reactor	Hazardous Waste/Waste Minimization	Nickel, chrome, benzene,	Reduce toxicity of hazardous waste sludges. This
Process		toluene, xylene, ethyl benzene	unit has been successfully operating since 1993.
Reformate Splitter	TRI/Source Reduction	Benzene, ethyl benzene, toluene,	Reduced aromatics in reformulated gasoline. This
Project		xylene	unit was put into operation in 1994.
WWTP VOC Controls	TRI/Source Reduction	All volatile TRI chemicals	Eliminate emission points to educe overall emission
			at slop oil storage. These upgrades were performed in 1994.
Tk115 & Tk116 Double	TRI/Source Reduction	TRI volatile chemicals	Prevent volatile emissions. Tanks 115&116 are
Seal			new sources, so overall emissions may not be
			reduced. This project was completed in 1993.
Marine Vapor Recovery	TRI/Source Reduction	TRI volatile chemicals	Recycle emissions normally lost during transfer
Unit			operations, thus eliminating emissions. These
Flue Gas Scrubber	TDIAN . NO. 1 . 1		controls were implemented in 1993
riue Gas Scrubber	TRI/Waste Minimization	TRI metals, sulfuric acid	Improve gas scrubbing efficiency and prevent
			particulates from being discharged. This project
HDPE Tank Liners	TRI/Source Reduction	TRI chemicals	was completed in 1993.
IIDI E Talik Ellicis	1 KI/Source Reduction	1 KI chemicals	Eliminate potential for contaminating groundwater
			in case of tank leakage. This is now a Valero
RFG for Refinery	TRI/Source Reduction	TRI chemicals	standard procedure.  Reduce VOC, NO <sub>x</sub> and Co emissions from vehicles.
Vehicles	A S S S S S S S S S S S S S S S S S S S	Tra chemicals	Reduce VOC, NO <sub>x</sub> and Co emissions from venicles.
LDAR	TRI/Source Reduction	TRI chemicals	Minimize releases of volatile organic compounds
		1	through improved leak detection and repair
			programs. This project is ongoing.
Upgrade WWTP	TRI/Waste Minimization	Ammonia	Improve wastewater treatment efficiency.
HOC Catalyst Recycling	TRI/Waste Minimization	Antimony, nickel	Reduce need to dispose of catalytic cracking
Project			catalyst.
Spent Catalyst Metals	TRI/Waste Minimization	Molybdenum, cobalt, nickel,	Ongoing program for metals recycling.
Reclamation		antimony	0, 0, 0
Gasoline Desulfurization	TRI/Source Reduction	TRI volatile chemicals	Produce motor gasolines with low sulfur content.

# SRWM Plan Executive Summary

Valero Refining – Texas, L.P.

Project Name	Category and Division	Pollutant Targeted	Reduction Goals
Project (GDU)			Unit came online June 2004.
ASO Washer	TRI/Source Reduction	TRI chemicals	Remove fluoride ions from wastewater system.
Seal Inspections	TRI/Source Reduction	Volatile organic chemicals	Reduce VOC emissions.

**New Projects** 

Project Name	Category and Division	Pollutant Targeted	Reduction Goals
Tank Slotted Guide Poles	TRI/Source Reduction	TRI volatile chemicals	Reduce emissions of volatile organic compounds by installing controls on slotted guide poles over a five-year period
Calcium Fluoride Recycle	TRI/Waste Minimization	Waste minimization	Evaluate use of spent calcium fluoride as raw material for hydrogen fluoride production
Slurry Oil Sediment	Hazardous Waste/Waste Minimization	NA	Evaluate methods to process this newly listed hazardous waste to reduce volume and possibly recover oil to return to process
Degassing of Tanks	TRI/Source Reduction	TRI volatile chemicals	Reduce emissions of volatile chemicals
Vacuum Trucks	TRI/Source Reduction	TRI volatile chemicals	Reduce emissions of volatile chemicals

## VI. Cross Media and Cross Pollutant Considerations

Valero has evaluated each of its source reduction and waste minimization projects to ensure that they do not result in the transfer of risk from one pollutant to another or transfer a pollutant from one media to another. By far the majority of Valero's projects result in avoidance of pollutant generation, the actual destruction of pollutants, or significant volume reductions in waste accompanied by recovery of oil or valuable metals.

# VII. Implementation Milestones and Schedule

The following milestones have been established for new projects.

Project Name	Milestone and Schedule
Install emission controls on tank slotted guide poles	Controls will be installed over the next several years as tanks are removed from service for routine maintenance.
Evaluate processing alternatives for slurry oil sediments	Evaluation of options for future management of this waste is underway. New waste processing methods will be implemented during the first tank cleaning event following the effective date of the new hazardous waste listing.
Degassing of tanks to control devices	Controls will be installed over the next several years as tanks are removed from service for routine maintenance.
Control on emissions from vacuum trucks	Controls will be installed in 2008 as available.

#### VIII. Certification

This certification is intended to meet the requirements of the Resource Conservation and Recovery Act, the Pollution Prevention Act of 1990, 30 TAC §335.471 through §335.480, and 30 TAC §120.101 through §120.110. I certify that Valero Refining – Texas, L.P. has developed a Source Reduction and Waste Minimization Plan for its Corpus Christi Refinery and that this plan is complete and correct. Valero understands that the goals of this plan are voluntary. Finally, Valero will appropriate the resources to properly assess pollutant sources and reduce and/or eliminate those sources where it is technically and economically feasible.

Dennis Payne

Vice President & General Manager Regional Refinery Operations 12/3/107

Date

# ATTACHMENT II PRIMARY EXPORTER CERTIFICATION

# Certification by Primary Exporter

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Dennis Payne, VP & General Manager

Date